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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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08/29/2001

Robert J. Lechner

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07/27/2004

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EXAMINER

SOTOMAYOR, JOHN

ART UNIT

PAPER NUMBER

3714

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/942,179

Applicant(s)

LECHNER, ROBERT J.

Examiner

John L Sotomayor

Art Unit

3714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 and 55-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 and 55-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

SPECIFICATION

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

The claim numbering includes two claims numbered 56. For purposes of examination, the Examiner will treat the misnumbered claims as follows:

- a. Current claim number "57" will be treated as claim "58".
- b. The current second claim numbered "56" will be treated as claim "57".

Appropriate correction is required.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/24/2004 has been entered.

Art Unit: 3714

In response to the amendment filed September 4, 2003, claims 1-31 and the newly added claims 55-58 are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1-10, 12-14, 16-29 and 31 are rejected under 35 U.S.C. 103(a) as being anticipated by Tran (US 5,892,462) in view of Nathman et al (US 6,268,858).

Regarding claims 1 and 17, Tran discloses an apparatus and method with a mission profiler for automatically determining an area containing the mission route (Col 2, lines 46-49), a search engine to automatically search a plurality of electronic collections of terrain source data covering the mission route area (Col 2, lines 25-32), an image engine for processing terrain source data into predefined formats (Col 2, lines 32-37, and a terrain engine to automatically compile processed data to create a terrain model for display during flight simulation (Col 3, lines 6-26). Tran does not specifically

Art Unit: 3714

disclose identifying terrain source data from at least two alternative predefined electronic collections of terrain source data that represents a common region of an area containing the mission route. However, Nathman et al teaches a plurality of separate, pre-defined electronic collections of terrain source data covering a common region of any area containing a mission route and that the user may select information for use in the simulation of data from both data collections or from one collection only to verify a single category of terrain feature (Col 1, line 54 – Col 2, line 24). Therefore, it would have been obvious to one of ordinary skill in the art to provide an apparatus and method with a mission profiler for automatically determining an area containing the mission route, a search engine to automatically search a plurality of electronic collections of terrain source data covering the mission route area, an image engine for processing terrain source data into predefined formats, and a terrain engine to automatically compile processed data to create a terrain model for display during flight simulation as disclosed by Tran with identified terrain source data from a plurality of alternative predefined electronic collections of terrain source data that represents a common region of an area containing the mission route and selecting the data to be viewed from only one data source as taught by Nathman et al for the purposes of building a highly realistic simulation environment from a plurality of terrain databases.

Regarding claims 2 and 18, Tran discloses an apparatus and method wherein the mission profiler comprises an input for receiving mission route data (Col 2, lines 64-67 and Col 3, lines 1-6).

Regarding claims 3 and 19, Tran discloses an apparatus and method for automatically dividing an area into a plurality of regions of the mission route and

Art Unit: 3714

determining a respective resolution of the terrain source data for each region (Col 3, lines 6-26).

Regarding claims 4 and 20, Tran discloses an apparatus and method to determine the area and resolution of regions based upon the type of aircraft or simulator platform being flown on the mission (Col 2, lines 64-67, Col 3, lines 1-6 and Col 3, lines 56-65).

Regarding claims 5 and 21, Tran discloses an apparatus and method receiving data defining a plurality of types of points for terrain details to determine flight area and terrain resolution along a mission route (Col 3, lines 15-26).

Regarding claims 6 and 22, Tran discloses an apparatus and method receiving data defining a plurality of types of points for terrain details to determine flight area and terrain resolution along a mission route and wherein the input to the system is adapted to receive adjustments to the data to output terrain details based upon adjusted data (Col 2, lines 25-46).

Regarding claims 7 and 23, Tran discloses an apparatus and method with a memory device for storing terrain source data (Col 2, lines 32-40).

Regarding claims 8 and 24, Tran discloses an apparatus and method wherein a memory device stores data from prior mission routes (Col 5, lines 57-62).

Regarding claims 9 and 25, Tran discloses an apparatus and method wherein the system compares collected terrain source data with data from prior mission routes to determine the terrain source data that is most acceptable for flight simulation of the mission route (Col 6, lines 25-41).

Regarding claims 10 and 26, Tran discloses an apparatus and method wherein the system collects the most current terrain source data and uses this information to predict and display mission route data (Col 6, lines 15-67).

Regarding claims 12 and 27, Tran discloses an apparatus and method wherein the image displayed is generated in a predefined format that is a corrected elevation model (Col 2, lines 28-34).

Regarding claims 13 and 28, Tran discloses an apparatus and method wherein the data imported to the system contains geospecific properties for the area containing the mission route (Col 2, lines 15-37).

Regarding claims 14 and 29, Tran discloses an apparatus and method wherein the data for creating the terrain model is based upon a combination of source data in the database and real-time processed data (Col 2, lines 25-46).

Regarding claims 16 and 31, Tran discloses an apparatus and method wherein the data received may be selected from a plurality of source data including elevational data and mission route data (Col 2, lines 32-46).

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tran in view of Nathman et al in further view of Wittenburg (US 4,985,854). Tran does not specifically disclose nor does Nathman et al teach that the memory device for storing data comprises two memory devices for storing terrain source data and data representative of the terrain source data. However, Wittenburg teaches that a memory device for the generation of photo-realistic terrain imagery comprises first and second ortho-rectified data layers including digitized elevation data and photographic terrain data (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of

Art Unit: 3714

invention to produce a system comprising comprises two memory devices for storing terrain source data and data representative of the terrain source data. Combining the system disclosed by Tran with the teaching of Wittenburg produces an imagery source that is photorealistic and provides a view with greater visual accuracy for pilots.

6. Claims 15 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran in view of Nathman et al in further view of Wysocki et al (US 5,381,338). Tran discloses the import of terrain data that includes information on structures that have been erected on the ground (Col 2, line 44). Tran does not specifically disclose importing data related to vegetation. However, Wysocki et al teaches that in cases where a mission route requires flying at very low altitude terrain information must include such features as the elevation of treetops and limbs (Col 4, lines 38-42). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to produce a terrain data importer with information related to vegetation and cultural features. Combining the system disclosed by Tran with the teaching of Wysocki et al produces a system with a larger performance envelope for pilots training on the system.

7. Claims 55-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran in view of Nathman et al in further view of Ashby et al (US 6,370,539).

Regarding claims 55 and 57, Tran discloses an apparatus and method for flight simulator mission planning with a terrain engine to automatically compile processed data to create a terrain model from electronic databases containing terrain data for display during flight simulation (Col 3, lines 6-26). Tran does not specifically disclose that metadata is used to select terrain source data from the plurality of electronic databases. However, Ashby et al teaches that electronic databases contain metadata tables within the

Art Unit: 3714

storage media for each version of the data within an electronic database allowing the selection and translation of data from the database containing the metadata (Col 35, lines 1-31). Therefore, it would have been obvious to one of ordinary skill in the art to provide an apparatus and method for flight simulator mission planning with a terrain engine to automatically compile processed data to create a terrain model from electronic databases containing terrain data for display during flight simulation as disclosed by Tran with metadata used to select terrain source data from the plurality of electronic databases as taught by Ashby et al for the purposes of selecting and displaying required mission data in a timely fashion.

Regarding claims 56 and 58, Tran does not specifically disclose a first memory device for storing the metadata and a second memory device for storing the terrain source data. However, Ashby et al teaches a means for providing backward compatibility in data source files that requires providing metadata in one storage device to another storage device that contains the source data from which the metadata selects resulting information for subsequent use (Col 35, lines 32-53). Therefore, it would have been obvious to one of ordinary skill in the art to provide an apparatus and method for flight simulator mission planning with a terrain engine to automatically compile processed data to create a terrain model from electronic databases containing terrain data for display during flight simulation as disclosed by Tran with a first memory device for storing the metadata and a second memory device for storing the terrain source data as taught by Ashby et al for the purposes of separating the data stores for greater flexibility in terrain source map generation.

Response to Arguments

Applicant's arguments with respect to claims 1-31 and 55-58 have been considered but are moot in view of the new ground(s) of rejection.

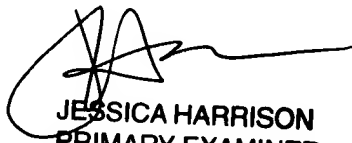
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John L Sotomayor whose telephone number is 703-305-4558. The examiner can normally be reached on 6:30-4:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on 703-308-1745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jls
July 20, 2004


JESSICA HARRISON
PRIMARY EXAMINER